Y. PAK

ENTERED

see page 6

RUSH #12

1600

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 3 <110> APPLICANT: UNIVERSITE DE MONTREAL
 5 <120> TITLE OF INVENTION: NEW METALLOPROTEASES OF THE NEPRILYSIN FAMILY
 7 <130> FILE REFERENCE: BIOMEP INC. NEPRILYSIN
C--> 9 <140> CURRENT APPLICATION NUMBER: US/09/913,329A
C--> 10 <141> CURRENT FILING DATE: 2001-08-21
 12 <150> PRIOR APPLICATION NUMBER: 2,260,376
 13 <151> PRIOR FILING DATE: 1999-02-11
 15 <160> NUMBER OF SEQ ID NOS: 17
 17 <170> SOFTWARE: PatentIn Ver. 2.1
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 20 <211> LENGTH: 750
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 29              20                  25                  30
 31 Val Leu Val Leu Leu Leu Thr Ile Ile Ala Val Thr Met Ile Ala Leu
 32              35                  40                  45
 34 Tyr Ala Thr Tyr Asp Asp Gly Ile Cys Lys Ser Ser Asp Cys Ile Lys
 35         50                  55                  60
 37 Ser Ala Ala Arg Leu Ile Gln Asn Met Asp Ala Thr Thr Glu Pro Cys
 38  65                  70                  75                  80
 40 Thr Asp Phe Phe Lys Tyr Ala Cys Gly Gly Trp Leu Lys Arg Asn Val
 41                  85                  90                  95
 43 Ile Pro Glu Thr Ser Ser Arg Tyr Gly Asn Phe Asp Ile Leu Arg Asp
 44             100                 105                 110
 46 Glu Leu Glu Val Val Leu Lys Asp Val Leu Gln Glu Pro Lys Thr Glu
 47             115                 120                 125
 49 Asp Ile Val Ala Val Gln Lys Ala Lys Ala Leu Tyr Arg Ser Cys Ile
 50         130                 135                 140
 52 Asn Glu Ser Ala Ile Asp Ser Arg Gly Gly Glu Pro Leu Leu Lys Leu
 53 145                 150                 155                 160
 55 Leu Pro Asp Ile Tyr Gly Trp Pro Val Ala Thr Glu Asn Trp Glu Gln
 56             165                 170                 175
 58 Lys Tyr Gly Ala Ser Trp Thr Ala Glu Lys Ala Ile Ala Gln Leu Asn
 59             180                 185                 190
 61 Ser Lys Tyr Gly Lys Lys Val Leu Ile Asn Leu Phe Val Gly Thr Asp
 62         195                 200                 205
 64 Asp Lys Asn Ser Val Asn His Val Ile His Ile Asp Gln Pro Arg Leu
 65         210                 215                 220
 67 Gly Leu Pro Ser Arg Asp Tyr Tyr Glu Cys Thr Gly Ile Tyr Lys Glu
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RAW SEQUENCE LISTING   DATE: 05/22/2003
PATENT APPLICATION: US/09/913,329A   TIME: 11:10:11

Input Set : A:\EP.txt
Output Set: N:\CRF4\05222003\I913329A.raw

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74               260                   265                   270
76 Met Asn Lys Val Met Glu Leu Glu Lys Glu Ile Ala Asn Ala Thr Ala
77           275                   280                   285
79 Lys Pro Glu Asp Arg Asn Asp Pro Met Leu Leu Tyr Asn Lys Met Thr
80       290                   295                   300
82 Leu Ala Gln Ile Gln Asn Asn Phe Ser Leu Glu Ile Asn Gly Lys Pro
83 305                   310                   315                   320
85 Phe Ser Trp Leu Asn Phe Thr Asn Glu Ile Met Ser Thr Val Asn Ile
86               325                   330                   335
88 Ser Ile Thr Asn Glu Glu Asp Val Val Val Tyr Ala Pro Glu Tyr Leu
89               340                   345                   350
91 Thr Lys Leu Lys Pro Ile Leu Thr Lys Tyr Ser Ala Arg Asp Leu Gln
92           355                   360                   365
94 Asn Leu Met Ser Trp Arg Phe Ile Met Asp Leu Val Ser Ser Leu Ser
95       370                   375                   380
97 Arg Thr Tyr Lys Glu Ser Arg Asn Ala Phe Arg Lys Ala Leu Tyr Gly
98 385                   390                   395                   400
100 Thr Thr Ser Glu Thr Ala Thr Trp Arg Arg Cys Ala Asn Tyr Val Asn
101               405                   410                   415
103 Gly Asn Met Glu Asn Ala Val Gly Arg Leu Tyr Val Glu Ala Ala Phe
104               420                   425                   430
106 Ala Gly Glu Ser Lys His Val Val Glu Asp Leu Ile Ala Gln Ile Arg
107           435                   440                   445
109 Glu Val Phe Ile Gln Thr Leu Asp Asp Leu Thr Trp Met Asp Ala Glu
110       450                   455                   460
112 Thr Lys Lys Arg Ala Glu Glu Lys Ala Leu Ala Ile Lys Glu Arg Ile
113 465                   470                   475                   480
115 Gly Tyr Pro Asp Asp Ile Val Ser Asn Asp Asn Lys Leu Asn Asn Glu
116               485                   490                   495
118 Tyr Leu Glu Leu Asn Tyr Lys Glu Asp Glu Tyr Phe Glu Asn Ile Ile
119               500                   505                   510
121 Gln Asn Leu Lys Phe Ser Gln Ser Lys Gln Leu Lys Lys Leu Arg Glu
122           515                   520                   525
124 Lys Val Asp Lys Asp Glu Trp Ile Ser Gly Ala Ala Val Val Asn Ala
125       530                   535                   540
127 Phe Tyr Ser Ser Gly Arg Asn Gln Ile Val Phe Pro Ala Gly Ile Leu
128 545                   550                   555                   560
130 Gln Pro Pro Phe Phe Ser Ala Gln Gln Ser Asn Ser Leu Asn Tyr Gly
131               565                   570                   575
133 Gly Ile Gly Met Val Ile Gly His Glu Ile Thr His Gly Phe Asp Asp
134           580                   585                   590
136 Asn Gly Arg Asn Phe Asn Lys Asp Gly Asp Leu Val Asp Trp Trp Thr
137           595                   600                   605
139 Gln Gln Ser Ala Ser Asn Phe Lys Glu Gln Ser Gln Cys Met Val Tyr
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145 Gly Ile Asn Thr Leu Gly Glu Asn Ile Ala Asp Asn Gly Gly Leu Gly
146             645             650             655
148 Gln Ala Tyr Arg Ala Tyr Gln Asn Tyr Ile Lys Lys Asn Gly Glu Glu
149             660             665             670
151 Lys Leu Leu Pro Gly Leu Asp Leu Asn His Lys Gln Leu Phe Phe Leu
152             675             680             685
154 Asn Phe Ala Gln Val Trp Cys Gly Thr Tyr Arg Pro Glu Tyr Ala Val
155             690             695             700
157 Asn Ser Ile Lys Thr Asp Val His Ser Pro Gly Asn Phe Arg Ile Ile
158 705             710             715             720
160 Gly Thr Leu Gln Asn Ser Ala Glu Phe Ser Glu Ala Phe His Cys Arg
161             725             730             735
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179 Leu Gly Thr Ile Leu Phe Leu Val Ser Gln Gly Leu Leu Ser Leu Gln
180             35             40             45
182 Ala Lys Gln Glu Tyr Cys Leu Lys Pro Glu Cys Ile Glu Ala Ala Ala
183       50             55             60
185 Ala Ile Leu Ser Lys Val Asn Leu Ser Val Asp Pro Cys Asp Asn Phe
186   65             70             75             80
188 Phe Arg Phe Ala Cys Asp Gly Trp Ile Ser Asn Asn Pro Ile Pro Glu
189             85             90             95
191 Asp Met Pro Ser Tyr Gly Val Tyr Pro Trp Leu Arg His Asn Val Asp
192             100             105             110
194 Leu Lys Leu Lys Glu Leu Leu Glu Lys Ser Ile Ser Arg Arg Arg Asp
195             115             120             125
197 Thr Glu Ala Ile Gln Lys Ala Lys Ile Leu Tyr Ser Ser Cys Met Asn
198       130             135             140
200 Glu Lys Ala Ile Glu Lys Ala Asp Ala Lys Pro Leu Leu His Ile Leu
201 145             150             155             160
203 Arg His Ser Pro Phe Arg Trp Pro Val Leu Glu Ser Asn Ile Gly Pro
204             165             170             175
206 Glu Gly Val Trp Ser Glu Arg Lys Phe Ser Leu Leu Gln Thr Leu Ala
207             180             185             190
209 Thr Phe Arg Gly Gln Tyr Ser Asn Ser Val Phe Ile Arg Leu Tyr Val
210             195             200             205
212 Ser Pro Asp Asp Lys Ala Ser Asn Glu His Ile Leu Lys Leu Asp Gln
213       210             215             220
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215 Ala Thr Leu Ser Leu Ala Val Arg Glu Asp Tyr Leu Asp Asn Ser Thr
216 225              230               235              240
218 Glu Ala Lys Ser Tyr Arg Asp Ala Leu Tyr Lys Phe Met Val Asp Thr
219              245               250              255
221 Ala Val Leu Leu Gly Ala Asn Ser Ser Arg Ala Glu His Asp Met Lys
222              260               265              270
224 Ser Val Leu Arg Leu Glu Ile Lys Ile Ala Glu Ile Met Ile Pro His
225          275               280              285
227 Glu Asn Arg Thr Ser Glu Ala Met Tyr Asn Lys Met Asn Ile Ser Glu
228      290               295              300
230 Leu Ser Ala Met Ile Pro Gln Phe Asp Trp Leu Gly Tyr Ile Lys Lys
231 305              310               315              320
233 Val Ile Asp Thr Arg Leu Tyr Pro His Leu Lys Asp Ile Ser Pro Ser
234              325               330              335
236 Glu Asn Val Val Val Arg Val Pro Gln Tyr Phe Lys Asp Leu Phe Arg
237              340               345              350
239 Ile Leu Gly Ser Glu Arg Lys Lys Thr Ile Ala Asn Tyr Leu Val Trp
240          355               360              365
242 Arg Met Val Tyr Ser Arg Ile Pro Asn Leu Ser Arg Arg Phe Gln Tyr
243      370               375               380
245 Arg Trp Leu Glu Phe Ser Arg Val Ile Gln Gly Thr Thr Thr Leu Leu
246 385              390               395              400
248 Pro Gln Trp Asp Lys Cys Val Asn Phe Ile Glu Ser Ala Leu Pro Tyr
249  ·            405               410              415
251 Val Val Gly Lys Met Phe Val Asp Val Tyr Phe Gln Glu Asp Lys Lys
252          420               425              430
254 Glu Met Met Glu Glu Leu Val Glu Gly Val Arg Trp Ala Phe Ile Asp
255      435               440               445
257 Met Leu Glu Lys Glu Asn Glu Trp Met Asp Ala Gly Thr Lys Arg Lys
258      450               455               460
260 Ala Lys Glu Lys Ala Arg Ala Val Leu Ala Lys Val Gly Tyr Pro Glu
261 465              470               475              480
263 Phe Ile Met Asn Asp Thr His Val Asn Glu Asp Leu Lys Ala Ile Lys
264              485               490              495
266 Phe Ser Glu Ala Asp Tyr Phe Gly Asn Val Leu Gln Thr Arg Lys Tyr
267          500               505               510
269 Leu Ala Gln Ser Asp Phe Phe Trp Leu Arg Lys Ala Val Pro Lys Thr
270          515               520               525
272 Glu Trp Phe Thr Asn Pro Thr Thr Val Asn Ala Phe Tyr Ser Ala Ser
273      530               535               540
275 Thr Asn Gln Ile Arg Phe Pro Ala Gly Glu Leu Gln Lys Pro Phe Phe
276 545              550               555              560
278 Trp Gly Thr Glu Tyr Pro Arg Ser Leu Ser Tyr Gly Ala Ile Gly Val
279              565               570              575
281 Ile Val Gly His Glu Phe Thr His Gly Phe Asp Asn Asn Gly Arg Lys
282          580               585               590
284 Tyr Asp Lys Asn Gly Asn Leu Asp Pro Trp Trp Ser Thr Glu Ser Glu
285          595               600               605
287 Glu Lys Phe Lys Glu Lys Thr Lys Cys Met Ile Asn Gln Tyr Ser Asn
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288      610                   615                   620
290 Tyr Tyr Trp Lys Lys Ala Gly Leu Asn Val Lys Gly Lys Arg Thr Leu
291 625                   630                   635                   640
293 Gly Glu Asn Ile Ala Asp Asn Gly Gly Leu Arg Glu Ala Phe Arg Ala
294                   645                   650                   655
296 Tyr Arg Lys Trp Ile Asn Asp Arg Arg Gln Gly Leu Glu Glu Pro Leu
297                   660                   665                   670
299 Leu Pro Gly Ile Thr Phe Thr Asn Asn Gln Leu Phe Phe Leu Ser Tyr
300           675                   680                   685
302 Ala His Val Arg Cys Asn Ser Tyr Arg Pro Glu Ala Ala Arg Glu Gln
303           690                   695                   700
305 Val Gln Ile Gly Ala His Ser Pro Pro Gln Phe Arg Val Asn Gly Ala
306 705                   710               .   715                   720
308 Ile Ser Asn Phe Glu Glu Phe Gln Lys Ala Phe Asn Cys Pro Pro Asn
309                   725                   730                   735
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312           740                   745
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316 <211> LENGTH: 732
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327 Arg Leu Pro Val Glu Gly Ser Arg Pro Trp Ala Val Ala Arg Arg Val
328           35                  40                  45
330 Leu Thr Ala Ile Leu Ile Leu Gly Leu Leu Leu Cys Phe Ser Val Leu
331       50                  55                  60
333 Leu Phe Tyr Asn Phe Gln Asn Cys Gly Pro Arg Pro Cys Glu Thr Ser
334 65                  70                  75                  80
336 Val Cys Leu Asp Leu Arg Asp His Tyr Leu Ala Ser Gly Asn Thr Ser
337               85                  90                  95
339 Val Ala Pro Cys Thr Asp Phe Phe Ser Phe Ala Cys Gly Arg Ala Lys
340               100                 105                 110
342 Glu Thr Asn Asn Ser Phe Gln Glu Leu Ala Thr Lys Asn Lys Asn Arg
343           115                 120                 125
345 Leu Arg Arg Ile Leu Glu Val Gln Asn Ser Trp His Pro Gly Ser Gly
346       130                 135                 140
348 Glu Glu Lys Ala Phe Gln Phe Tyr Asn Ser Cys Met Asp Thr Leu Ala
349 145                 150                 155                 160
351 Ile Glu Ala Ala Gly Thr Gly Pro Leu Arg Gln Val Ile Glu Glu Leu
352               165                 170                 175
354 Gly Gly Trp Arg Ile Ser Gly Lys Trp Thr Ser Leu Asn Phe Asn Arg
355           180                 185                 190
357 Thr Leu Arg Leu Leu Met Ser Gln Tyr Gly His Phe Pro Phe Phe Arg
358       195                 200                 205
360 Ala Tyr Leu Gly Pro His Pro Ala Ser Pro His Thr Pro Val Ile Gln
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RAW SEQUENCE LISTING ERROR SUMMARY   DATE: 05/22/2003
PATENT APPLICATION: **US/09/913,329A**   TIME: 11:10:12

Input Set : **A:\EP.txt**
Output Set: **N:\CRF4\05222003\I913329A.raw**

Please Note:
Use of n and/or Xaa have been detected in the Sequence Listing. Please review the
Sequence Listing to ensure that a corresponding explanation is presented in the <220>
to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:5; N Pos. 14,18,21
Seq#:6; N Pos. 14,18,21
Seq#:7; N Pos. 4,7,14,17,20,25
Seq#:8; N Pos. 4,7,14,17,20,25
Seq#:9; N Pos. 2,3,6,9,18,21
Seq#:10; N Pos. 12,24
Seq#:11; N Pos. 9,12,31

VERIFICATION SUMMARY   DATE: 05/22/2003
PATENT APPLICATION: **US/09/913,329A**   TIME: 11:10:12

Input Set : **A:\EP.txt**
Output Set: **N:\CRF4\05222003\I913329A.raw**

L:9 M:270 C: Current Application Number differs, Replaced Current Application Number
L:10 M:271 C: Current Filing Date differs, Replaced Current Filing Date
L:636 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5 after pos.:0
L:664 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:6 after pos.:0
L:707 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:7 after pos.:0
L:750 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:8 after pos.:0
L:793 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:9 after pos.:0
L:816 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:10 after pos.:0
L:844 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11 after pos.:0